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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,367	05/11/2001	Francis Michon	3842-4050	5710

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EXAMINER
DEVI, SARVAMANGALA J N

ART UNIT	PAPER NUMBER
1645	9

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/853,367	Michon et al.
Examiner	**Art Unit**
S. Devi, Ph.D.	1645

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *three* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Feb 8, 2003*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1 and 4-33* is/are pending in the application.

4a) Of the above, claim(s) *19-28 and 30-33* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1, 4-18 and 29* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

RESPONSE TO APPLICANTS' AMENDMENT

Applicants' Amendment

1) Acknowledgment is made of Applicants' amendment filed 02/06/03 (paper no. 8) in response to the non-final Office Action mailed 08/06/02 (paper no. 6). With this, Applicants have amended the specification.

Status of Claims

2) Claims 2 and 3 have been canceled via the amendment filed 02/08/03.

Claims 1, 4-11, 13-16, 19, 20, 22-24 and 29 have been amended via the amendment filed 02/08/03.

Claims 1 and 4-33 are pending.

Claims 1, 4-18 and 29 are under examination.

Prior Citation of Title 35 Sections

3) The text of those sections of Title 35 U.S. Code not included in this action can be found in a prior Office Action.

Prior Citation of References

4) The references cited or used as prior art in support of one or more rejections in the instant Office Action and not included on an attached form PTO-892 or form PTO-1449 have been previously cited and made of record.

Objection(s) Withdrawn

5) The objection to the specification made in paragraph 4(a) of the Office Action mailed 08/06/02 (paper no. 6) is withdrawn in light of Applicants' amendment to the specification.

6) The objection to the specification made in paragraph 4(b) of the Office Action mailed 08/06/02 (paper no. 6) is withdrawn.

7) The objection to claim 9 made in paragraph 12 of the Office Action mailed 08/06/02 (paper no. 6) is withdrawn in light of Applicants' amendment to the claim.

Rejection(s) Moot

8) The rejection of claim 2 made in paragraph 5(a) of the Office Action mailed 11/05/02 (paper no. 13) is moot in light of Applicants' cancellation of the claim.

9) The rejection of claim 3 made in paragraph 5(l) of the Office Action mailed 11/05/02

(paper no. 13) is moot in light of Applicants' cancellation of the claim.

10) The rejection of claims 2 and 3 made in paragraph 10 of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 103(a) as being unpatentable over Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986) (Fillit *et al.*, 1986) in view of Nebinger *et al.* (*J. Chromatol.* 265: 19-25, 1983) (Nebinger *et al.*, 1983), or Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985) (Nebinger *et al.*, 1985), or Shimada *et al.* [*J. Biochem* (*Tokyo*) 96: 721-725, 1984], or Ulrich *et al.* (*Hoppe-Seyler's Z. Physiol. Chem.* 360: 1457-1463, 1979, abstract), is moot in light of Applicants' cancellation of the claims.

11) The rejection of claim 3 made in paragraph 11 of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 103(a) as being unpatentable over Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986) (Fillit *et al.*, 1986) as modified by Nebinger *et al.* (*J. Chromatol.* 265: 19-25, 1983) (Nebinger *et al.*, 1983), or Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985) (Nebinger *et al.*, 1985), or Shimada *et al.* [*J. Biochem* (*Tokyo*) 96: 721-725, 1984], or Ulrich *et al.* (*Hoppe-Seyler's Z. Physiol. Chem.* 360: 1457-1463, 1979) as applied to claim 2 and 1, and further in view of Blake *et al.* (US 5,439,808) and Philip *et al.* (US 6,054,127), is moot in light of Applicants' cancellation of the claim.

Rejection(s) Withdrawn

12) The rejection of claim 4 made in paragraph 5(b) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

13) The rejection of claim 5 made in paragraph 5(c) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

14) The rejection of claim 6 made in paragraph 5(d) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

15) The rejection of claim 7 made in paragraph 5(e) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

16) The rejection of claims 4-7 made in paragraph 5(f) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claims and/or the base claim.

17) The rejection of claim 8 made in paragraph 5(g) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

18) The rejection of claim 11 made in paragraph 5(h) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

19) The rejection of claim 13 made in paragraph 5(i) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

20) The rejection of claim 16 made in paragraph 5(k) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claim.

21) The rejection of claims 4-18 and 29 made in paragraph 5(l) of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 112, second paragraph, as being indefinite, is withdrawn in light of Applicants' amendment to the claims and/r the base claim.

22) The rejection of claim 1 made in paragraph 7 of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 102(b) as being anticipated by Simon *et al.* (WO 00/12122, published 03/09/00 - original and English translation), or Pierschbacher *et al.* (US 5,955,578), or Rhee *et al.* (US 5,510,418), is withdrawn in light of Applicants' amendment to the claim.

23) The rejection of claim 1 made in paragraph 8 of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 102(b) as being anticipated by Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986) (Fillit *et al.*, 1986) as evidenced by Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985) (Nebinger *et al.*, 1985), is withdrawn in light of Applicants' amendment to the claim.

24) The rejection of claims 1, 4-10 and 13-18 made in paragraph 10 of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 103(a) as being unpatentable over Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986) (Fillit *et al.*, 1986) in view of Nebinger *et al.* (*J. Chromatol.*

265: 19-25, 1983) (Nebinger *et al.*, 1983), or Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985) (Nebinger *et al.*, 1985), or Shimada *et al.* [*J. Biochem* (*Tokyo*) 96: 721-725, 1984], or Ulrich *et al.* (*Hoppe-Seyler's Z. Physiol. Chem.* 360: 1457-1463, 1979, abstract), is withdrawn in light of Applicants' amendment to the claim.

25) The rejection of claims 11, 12 and 29 made in paragraph 11 of the Office Action mailed 11/05/02 (paper no. 13) under 35 U.S.C. § 103(a) as being unpatentable over Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986) (Fillit *et al.*, 1986) as modified by Nebinger *et al.* (*J. Chromatol.* 265: 19-25, 1983) (Nebinger *et al.*, 1983), or Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985) (Nebinger *et al.*, 1985), or Shimada *et al.* [*J. Biochem* (*Tokyo*) 96: 721-725, 1984], or Ulrich *et al.* (*Hoppe-Seyler's Z. Physiol. Chem.* 360: 1457-1463, 1979) as applied to claims 2 and 1 above, and further in view of Blake *et al.* (US 5,439,808) and Philip *et al.* (US 6,054,127), is withdrawn in light of Applicants' amendment to the claim.

New Rejection(s)

Applicants are asked to note the following new rejection(s) made in this Office. The new rejections are necessitated by Applicants' amendments to the claims and/or the base claims.

Rejection(s) under 35 U.S.C § 112, First Paragraph

26) Claims 1, 4-18 and 29 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. This is a new matter rejection.

Instant base claims and/or those that depend therefrom, as amended, include the new limitation: hyaluronic acid "moieties" and/or "immunogenic conjugate induces an immune response to epitopes comprising the non-reducing terminal glucuronic acid or unsaturated glucuronic acid residues of said hyaluronic acid moities". The limitation 'immune response' to epitopes encompasses cellular immune response. Applicants point to page 6, lines 13 through page 10, line 21 as providing descriptive support for the new limitations. However, these parts of the specification pointed to by Applicants do not provide support for hyaluronic acid "moieties" and/or "immunogenic conjugate induces an immune response to epitopes comprising the non-reducing terminal glucuronic acid or unsaturated glucuronic acid residues of said hyaluronic acid

moities". Therefore, the added limitations in the claims are considered to be new matter. *In re Rasmussen*, 650 F2d 1212 (CCPA, 1981). New matter includes not only the addition of wholly unsupported subject matter but also, adding specific percentages or compounds after a broader original disclosure, or even omission of a step from a method. See M.P.E.P 608.04 to 608.04(c).

Applicants are respectfully requested to remove the new matter from the claim(s), or invited to point to specific pages and line numbers in the specification where support for such recitations can be found.

Rejection(s) under 35 U.S.C § 112, Second Paragraph

27) Claims 12, 13, 17, 18 and 29 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

(a) Claim 13 lacks proper antecedent basis for the recitation "hyaluronic acid moities". Claim 13 now depends from claim 1, which already recites "hyaluronic acid moities". For proper antecedence, it is suggested that Applicants replace the limitation with --hyaluronic acid moities--.

(b) Claims 12, 17, 18 and 29 are improperly dependent, directly or indirectly, from a canceled claim.

Rejection(s) under 35 U.S.C. § 103

28) Claims 1, 4-10 and 13-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Fillit *et al.* (*J. Exp. Med.* 168: 971-982, 1988) in view of Kazuo *et al.* (JP 9012600), Nebinger *et al.* (*J. Chromatol.* 265: 19-25, 1983, already of record) (Nebinger *et al.*, 1983), or Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985, already of record) (Nebinger *et al.*, 1985), or Shimada *et al.* [*J. Biochem* (*Tokyo*) 96: 721-725, 1984, already of record], or Ulrich *et al.* (*Hoppe-Seyler's Z. Physiol. Chem.* 360: 1457-1463, 1979, abstract - already of record) and Kazuo *et al.* (JP 9012600) and Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986, already of record) (Fillit *et al.*, 1986).

Fillit *et al.* (1988) taught a streptococcal hyaluronate covalently linked to liposomes to produce an immunogenic conjugate composition that induces anti-streptococcal hyaluronate serum antibodies in mice when used in Freund's adjuvant (see abstract). The purified streptococcal hyaluronate was partially hydrolyzed (i.e., rendered low molecular weight) with testicular

hyaluronidase, or sonicated, and then conjugated to phosphatidylethanolamine (see page 972). The molecular weight of the treated HA was 1.5×10^4 kD (see page 974). Hyaluronidase treatment of HA reduced its chain length (see page 980). The conjugate contained in PBS and an adjuvant was used to immunize mice or rabbits, in whom it induced antibodies with specificity for terminal glucuronic acid (see Results; and page 975). Fillit *et al.* (1988) taught that testicular hyaluronidase treatment uniquely exposes a specific terminal hyaluronic acid antigenic sites or immunodeterminants comprising glucuronic acid and enhances its antigenicity (see pages 974; 977 and 978). Fillit *et al.* (1988) taught that HA immunogenicity is not a function of chain length (see page 975).

Fillit *et al.* (1988) are silent about the percent HA possessing terminal glucuronic acid and do not teach the recited HA of molecular weight and HA being conjugated to an immunologically suitable polypeptide carrier.

However, Kazuo *et al.* expressly demonstrated that hyaluronate-specific antibodies could be produced by conjugating it to a protein, such as, hemocyanin, or alternatively to a phospholipid, such as, phosphatidylethanolamine, and by immunizing an animal with the conjugate (see abstract). Thus, Kazuo *et al.* taught and showed that a protein and a phosphatidylethanolamine carrier can be used interchangeably in conjugation of HA to render it immunogenic.

The lower molecular weight oligosaccharides of hyaluronic acid were available in the art and have been routinely produced by those of skill in the art. For example, Nebinger *et al.* (1985) taught odd- and even-numbered oligosaccharides of hyaluronic acid of up to decasaccharides containing glucuronic acid at the nonreducing terminus separated by gel permeation chromatography on Sephadex G-25 and ion exchange chromatography (see abstract). That such decasaccharides of hyaluronic acid constitute low molecular weight hyaluronic acid with a molecular weight of less than about 400 kd or less and about 600 daltons or more is implicit from the teachings of Nebinger *et al.* (1985).

Nebinger *et al.* (1983) taught even-numbered and odd-numbered oligosaccharides of hyaluronic acid up to octasaccharides containing glucuronic acid at the nonreducing terminus (see abstract). That such octasaccharides of hyaluronic acid are low molecular weight hyaluronic acid with a molecular weight of less than about 400 kd and about 600 daltons or more is implicit from the teachings of Nebinger *et al.* (1983).

Similarly, Shimada *et al.* taught odd- and even-numbered hyaluronic acid oligosaccharides (therefore, low molecular weight hyaluronic acid) containing glucuronic acid or unsaturated glucuronic acid residues at their non-reducing ends. The oligosaccharides were comprised in a NaCl-containing solvent system (see abstract).

Ulrich *et al.* also taught oligosaccharides of hyaluronic acid (therefore, low molecular weight hyaluronic acid), including a tetrasccharide, containing glucuronic acid as non-reducing terminal (see abstract).

Fillit *et al.* (1986) taught the need in the art to markedly reduce the viscosity of streptococcal hyaluronate and to render it manageable for further manipulation. Fillit *et al.* (1986) taught that enzymatic treatment with testicular hyaluronidase exposes hidden antigenic sites of hyaluronate that contain terminal glucuronic acid (see pages 763 and 762).

Given that hyaluronate had already been rendered immunogenic in the art at the time of the invention by conjugation to phosphatidylethanolamine, or alternatively to a protein as taught by Kazuo *et al.*, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to replace the relatively large hyaluronate in Fillit's (1988) conjugate with Nebinger's (1983 or 1985) decasaccharides or octasaccharides, or Shimada's hyaluronic acid oligosaccharides, or Ulrich's hyaluronic acid tetrasaccharides, and replace Fillits' phosphatidylethanolamine with Kazuo's protein, such as, hemocyanin, to produce the instant invention, with a reasonable expectation of success. One of skill in the art would have been motivated to produce the instant invention for the expected benefit of reducing the viscosity of Fillit's (1988) relatively large hyaluronic acid so that the product becomes manageable with the hidden antigenic sites of terminal glucuronic acid advantageously exposed as taught by Fillit *et al.* (1986). Given Kazuo's explicit demonstration that hyaluronate could be rendered immunogenic by conjugating it alternatively to a protein, the substitution of one carrier such as Fillits' (1988) phosphoehtanolamine with an alternate, art-used, interchangeable protein carrier for the same purpose of obtaining an immunogenic HA would have been obvious to one skill in the art and would have been well within the realm of routine experimentation.

With regard to the percent of HA with glucuronic acid, the process of optimizing, or increasing or decreasing the percent of HA with glucuronic acids to a desired percent in an art-

known conjugate is well within the realm of routine experimentation and would have been obvious to a skilled artisan at the time of the instant invention. It has been held legally obvious and within the routine skill in the art to optimize a result-effected variable. In the instant case, the percent content of the glucuronic acid in the conjugate is clearly a result-effected variable, and it would have been obvious to vary or optimize the glucuronic acid content as desired in the prior art conjugate, for example to greater than 50%, 90%, 95%, 98% or 99%, by routine experimentation.

Claims 1, 4-10 and 13-16 are *prima facie* obvious over the prior art of record.

29) Claim 11 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Fillit *et al.* (*J. Exp. Med.* 168: 971-982, 1988) as modified by Kazuo *et al.* (JP 9012600), Nebinger *et al.* (*J. Chromatol.* 265: 19-25, 1983, already of record) (Nebinger *et al.*, 1983), or Nebinger *et al.* (*J. Chromatol.* 320: 351-359, 1985, already of record) (Nebinger *et al.*, 1985), or Shimada *et al.* [*J. Biochem* (*Tokyo*) 96: 721-725, 1984, already of record], or Ulrich *et al.* (*Hoppe-Seyler's Z. Physiol. Chem.* 360: 1457-1463, 1979, abstract - already of record) and Kazuo *et al.* (JP 9012600) and Fillit *et al.* (*J. Exp. Med.* 164: 762-776, 1986, already of record) (Fillit *et al.*, 1986) as applied to claim 1 above, and further in view of Blake *et al.* (US 5,439,808, already of record) and Philip *et al.* (US 6,054,127, already of record).

The teachings of Fillit *et al.* (1986) as modified by Kazuo *et al.*, Nebinger *et al.* (1983 or 1985) or Shimada *et al.* or Ulrich *et al.* and Fillit *et al.* (1986) are explained above, which do not teach neisserial porin or a meningococcal protein as the immunologically suitable polypeptide in the conjugate.

However, the use of a meningococcal protein or porin for producing polysaccharide conjugates is well known in the art. For example, Blake *et al.* teach a class 3 outer membrane protein of *Neisseria meningitidis* (i.e., an immunogenic meningococcal porin) and its use as a carrier protein in polysaccharide conjugate vaccines (see column 4, lines 9-19; column 9, fourth paragraph; and column 10, second paragraph).

Philip *et al.* teach that bovine serum albumin is a less appropriate or less desirable protein carrier for use in human vaccines because of the generation of anti-BSA antibodies that have the potential to cause adverse responses (see column 11, lines 1-7 and 25-27).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the

invention was made to replace hemocyanin in the Fillits' (1988) conjugate as modified by Kazuo *et al.*, Nebinger *et al.* (1983 or 1985) or Shimada *et al.* or Ulrich *et al.* and Fillit *et al.* (1986) with Blake's meningococcal porin to produce the conjugate of the instant invention, with a reasonable expectation of success. One skilled in the art would have been motivated to produce the instant invention for the expected benefit of avoiding the generation of anti-BSA antibodies in humans that have the potential to cause adverse responses, as taught by Philip *et al.*

Claim 11 is *prima facie* obvious over the prior art of record.

Remarks

30) Claims 1, 4-18 and 29 stand rejected.

31) Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

32) Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Fax Center located in Crystal Mall 1. The transmission of such papers by facsimile must conform with the notice published in the Official Gazette, 1096 OG 30, November 15, 1989. The CM1 facsimile center's telephone number is (703) 308-4242, which is able to receive transmissions 24 hours a day and 7 days a week. The RightFax number for submission of before-final amendments is (703) 872-9306. The RightFax number for submission of after-final amendments is (703) 872-9307.

33) Any inquiry concerning this communication or earlier communication(s) from the Examiner should be directed to S. Devi, Ph.D., whose telephone number is (703) 308-9347. A message may be left on the Examiner's voice mail service. The Examiner can normally be reached on Monday to

Friday from 7.15 a.m to 4.15 p.m. except one day each bi-week which would be disclosed on the Examiner's voice mail system.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lynette Smith, can be reached on (703) 308-3909.

S. DEVI, PH.D.
PRIMARY EXAMINER

May, 2003